

COMPLETE SET OF PENDING CLAIMS

1. (Currently Amended) A navigation device comprising:
an electronic compass to detect an orientation and provide a corresponding heading signal;
one or more motion sensing devices to detect motion along different ~~axis~~ axes and provide corresponding motion signals; and
a processing unit communicatively coupled to the electronic compass and the one or more motion sensing devices to receive the heading signal and the one or more motion signals, determine a position and orientation, and automatically provide different navigation information depending on the orientation of the navigation device.
2. (Original) The navigation device of claim 1 wherein the processing unit is further configured to provide different navigation information depending on whether the navigation device is affixed to a user or not.
3. (Previously Presented) The navigation device of claim 2 further comprising:
a visible indicator to provide navigation information to a user.
4. (Previously Presented) The navigation device of claim 1 wherein the navigation device automatically switches between different modes of operation depending on the orientation of the navigation device,
and provides either heading or position information, depending on the mode of operation.
5. (Original) The navigation device of claim 1 wherein
if the navigation device is affixed to a user and the device is in a primary orientation, navigation calculations are made according to bipedal ambulation to provide a position,
if the navigation device is affixed to a user and the device is in a secondary orientation, then navigation calculations are made according to crawling ambulation to provide a position,
and
if the navigation device is hand-held, only azimuth data is provided to the user.

6. (Original) The navigation device of claim 1 further comprising:
a communication port to transmit navigation information.
7. (Original) A method of navigation comprising:
determining whether a navigation device is affixed to a user;
obtaining an azimuth heading;
calculating a dead reckoning position if the navigation device is affixed to the user;
providing azimuth heading and dead reckoning position if the navigation device is affixed to the user; and
providing azimuth heading otherwise.
8. (Currently Amended) The method of claim 7 further comprising:
determining an orientation of the navigation device relative to a horizontal plane;
calculating the dead reckoning position according to bipedal ambulation when the navigation device is affixed to the user and is in a first orientation; and
~~calculating~~ calculating the dead reckoning position according to crawling ambulation when the navigation device is affixed to the user and is in a second orientation.
9. (Currently Amended) A method comprising:
determining the orientation of a navigation device;
automatically selecting a first motion measurement algorithm if the navigation device is in a first orientation;
automatically selecting a second motion measurement algorithm if the navigation device is in a second orientation; and
providing a position according to the ~~pedometry~~ motion measurement algorithm selected.
10. (Original) The method of claim 9 wherein the orientation of the navigation device is determined relative to a horizontal plane.
11. (Original) The method of claim 9 further comprising:
determining if the navigation device is affixed to a user;

automatically selecting the first motion measurement algorithm if the navigation device is in the first orientation and affixed to the user;

automatically selecting the second motion measurement algorithm if the navigation device is in the second orientation and affixed to the user; and

suspending all motion measurement calculations if the navigation device is not affixed to the user.

12. (Original) A machine-readable medium having one or more instructions for dead reckoning navigation, which when executed by a processor, causes the processor to perform operations comprising

determining whether a navigation device is affixed to a user;
obtaining an azimuth heading;
calculating a dead reckoning position if the navigation device is affixed to the user;
outputting the azimuth heading and dead reckoning position if the navigation device is affixed to the user; and
outputting the azimuth heading otherwise.

13. (Original) The machine-readable medium of claim 12 to further:

determining an orientation of the navigation device relative to a horizontal plane,
calculating the dead reckoning position according to bipedal ambulation when the navigation device is affixed to the user and is in a first orientation, and
calculating the dead reckoning position according to crawling ambulation when the navigation device is affixed to the user and is in a second orientation.

14. (Previously Presented) The method of claim 9 further comprising:
detecting if a step has been taken.

15. (Previously Presented) The method of claim 9 further comprising:
providing heading information.

16. (Currently Amended) The navigation device of claim 1 wherein ~~determining the orientation includes determining the orientation of a gravity vector.~~ the processing unit

determines direction of a gravity vector from the one or more motion signals generated by the one or more motion sensing devices.

17. (Previously Presented) The navigation device of claim 1 further comprising:
a detector to detect when the navigation device is inserted in a holster.
18. (New) The navigation device of claim 1 wherein the electronic compass includes a configurable horizontal plane that is
set to a first physical horizontal plane of the navigation device when the navigation device is in a first orientation, and
set to a second physical horizontal plane of the navigation device when the navigation device is in a second orientation.
19. (New) The navigation device of 5 wherein the electronic compass, the one or more motion sensing devices, and the processing unit are physically incorporated and housed in the navigation device.
20. (New) The method of claim 10 further comprising:
automatically resetting a compass horizontal plane of reference to
a first physical horizontal plane of the navigation device when the navigation device is in a first orientation, and
a second physical horizontal plane of the navigation device when the navigation device is in a second orientation.